

CEMP-E/ CECW-E  Engineer Regulation 1110-1-8155	Department of the Army U.S. Army Corps of Engineers Washington, DC 20314-1000	ER 1110-1-8155  24 December 1998
	Engineering and Design  SPECIFICATIONS	
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CEMP-E  
CECW-E

DEPARTMENT OF THE ARMY  
U.S. Army Corps of Engineers  
Washington, DC 20314-1000

ER 1110-1-8155

Regulation  
No. 1110-1-8155

24 December 1998

Engineering and Design  
**SPECIFICATIONS**

**1. Purpose.** This joint Civil Works and Military Programs regulation prescribes specifications policy and requirements, incorporates Total Army Quality principles, and enables Headquarters U.S. Army Corps of Engineers (HQUSACE) elements and U.S. Army Corps of Engineers (USACE) commands to produce quality specifications.

**2. Applicability.** This regulation is applicable to all HQUSACE elements and USACE commands having design or construction responsibilities.

**3. References.** Required and related publications are listed in Appendix A.

**4. Distribution.** This regulation is approved for public release; distribution is unlimited.

**5. Definitions.**

**a. Design Agency.** A HQUSACE element or USACE command having military and/or civil works design responsibilities.

**b. Specifications Engineer.** The individual within a design agency who is assigned primary responsibility for overseeing the preparation of complete project specifications and coordinating contract documents.

**c. Designer.** An individual within a design agency who has design responsibility for certain features of a project involving one or more engineering and design discipline, e.g., architectural, structural, mechanical, electrical.

**d. HQUSACE Specifications Proponents.** The individuals within HQUSACE Directorates of Military Programs (Engineering and Construction Division, CEMP-E) and Civil Works (Engineering and Construction Division, CECW-E) designated to address the needs and concerns of design agencies related to the preparation of quality guide specifications and project specifications.

**e. HQUSACE Technical Proponent.** An individual who develops technical policy and approves guide specifications. Technical policy is contained in documents such as engineering manuals, engineering regulations, technical instructions, and similar publications issued by HQUSACE. Technical policy is reflected in the Corps of Engineers Guide Specifications (CEGS).

**f. Technical Representative.** An individual designated to serve as technical expert for a certain guide specification or criteria document.

**g. Corps of Engineers Guide Specifications (CEGS).** A system of master guide specifications that define the qualitative requirements for products, materials, and workmanship for work features that occur in USACE construction projects on a repetitive basis. CEGS include Military Programs and Civil Works guide specifications and facilitate the efficient production of quality project specifications.

**h. Notice Program.** The program administered by Civil Works and Military Programs to maintain the CEGS.

**i. Notice Program Coordinators.** The individuals designated to manage Military Programs and Civil Works functions of the Notice Program and serve as points of contact for program operations.

**j. TECHINFO.** An Internet-based construction criteria information system that is managed for HQUSACE by the U.S. Army Engineering and Support Center, Huntsville (CEHNC-ED-ES). Because the system is updated as criteria are approved or revised, TECHINFO contains the most current editions of CEGS and engineering criteria documents.

**k. Construction Criteria Base (CCB).** A database developed by the National Institute of Building Sciences and available in CD-ROM and DVD media and on the Internet. The database contains design and construction documents from federal and private organizations, including Army, Navy, and NASA guide specifications.

**l. SPECSINTACT.** The software program, copyrighted by the National Aeronautics and Space Administration (NASA), mandated for use in producing USACE project specifications and maintaining guide specifications. The software provides state-of-the-art specification automation to users, incorporating a wide range of quality control features. The software is a cooperative effort by Army, Navy, and NASA that provides greater uniformity and better transportability of guide specifications of the other departments and agencies. SPECSINTACT is available through TECHINFO and CCB.

**m. Construction Specifications Institute (CSI).** A non-profit organization, with members from all areas of the construction and engineering industry, that establishes and publishes formats and organization standards for use in the preparation of construction specifications and other construction documents.

**n. CSI Manual of Practice.** An industry-recognized reference manual that contains recommended methods and practices for preparing, organizing, and formatting construction specifications and other construction documents.

**o. Project Specifications.** Specifications (also known as construction specifications) produced using the CSI format that define construction requirements which apply to a specific project.

**p. Standard Specifications for Military Construction.** Specifications that are developed under direction of HQUSACE (CEMP-E) as part of a standard design package that provides unique requirements for facilities intended for site adaptation at several locations, e.g., POL

Storage Facilities. Standard specifications are based on CEGS format and are developed in sufficient detail to serve as construction documents after site-specific requirements are incorporated. Standard specifications are packaged with the design drawings to which they apply and are available from the U.S. Army Engineering and Support Center, Huntsville (CEHNC-ED-ES).

**q. Federal Specifications and Standards (FED-SPECS and FED-STDS).** Documents issued or controlled by the General Services Administration (GSA) which are sometimes referenced in the CEGS to define requirements. Active FED-SPECS and FED-STDS cited in DoD documents are available from the GSA Federal Supply Service Bureau.

**r. Military Specifications and Standards (MIL-SPECS and MIL-STDS).** Documents issued or controlled by one of the military departments which are sometimes referenced in the CEGS to define requirements. Active MIL-SPECS and MIL-STDS are available from the DoD Single Stock Point (DoDSSP).

**s. Reference Standards.** Documents that contain requirements set by authority, custom, or general consensus and are established as accepted criteria. They are published by trade associations, professional societies, standards-writing organizations, governments, and institutional organizations, e.g., the American National Standards Institute (ANSI) and the American Society for Testing and Materials (ASTM). These documents are incorporated by reference into CEGS and project specifications to define qualitative and performance requirements for materials, equipment, systems, test methods, and workmanship.

**6. HQUSACE Specifications Proponents.** HQUSACE specifications proponents use input from a variety of sources to ensure that specifications issues affecting USACE are addressed at the headquarters level. The specifications proponents maintain a liaison between the Military Programs and Civil Works Directorates at HQUSACE, as well as the specifications proponents from other agencies and DoD departments. HQUSACE specifications proponents jointly represent USACE specifications concerns and issues involving other agencies and departments as appropriate, e.g., SPECSINTACT enhancements and CCB issues.

**7. Specifications Steering Committees.** Specifications steering committees may be established by HQUSACE specifications proponents to support Civil Works and/or Military Programs mission requirements. Steering committees established to meet directorate-unique requirements will be coordinated between the HQUSACE specifications proponents. The Corps of Engineers Specifications Steering Committee (CSSC) has been established by ER 15-1-41 to provide policy recommendations for improving CEGS and project specifications.

## **8. Corps of Engineers Guide Specifications (CEGS).**

**a. Purpose.** CEGS provide design agencies and their contractors a set of master guide specifications reflecting HQUSACE technical policy that will enhance productivity, quality, and uniformity of USACE construction. CEGS are revised and reissued periodically to incorporate lessons learned and technological advances.

(1) CEGS promote full and open competition in procurement in accordance with FAR Subpart 11.002 and maximize construction economy consistent with sound functional, aesthetic, environmental, energy conservation, and architectural and engineering practices.

(2) CEGS contain designer notes providing guidance on use of the specifications and the coordination required with the other project specification sections and with the project drawings. Additionally, through the use of "brackets", the guide specifications identify blanks to be filled in and alternative text for selection by designers.

(3) CEGS used in combination with SPECSINTACT automated processing methods improve project specification production, uniformity, consistency, and overall quality in accordance with USACE policy. Uniformity and consistency of project specifications aid contractors in their preparation of bids, improve quality of construction, and reduce cost to USACE customers.

(4) The CEGS designation is restricted to HQUSACE use only.

**b. CEGS Development and Update Process.** CEGS are developed and maintained (along with other design tools and criteria documents) under independent Standards and Criteria (S&C) Programs administered by Military Programs and Civil Works, respectively, to be responsive to directorate-unique mission requirements. HQUSACE technical proponents identify CEGS and S&C to be developed under the appropriate program from a variety of factors, e.g., new federal mandates, DoD and DA policy requirements, technological advances, and user feedback from lessons learned during design and construction. CEGS and S&C are approved for the S&C Programs each fiscal year based on program priorities and available resources.

(1) When a CEGS is approved for development, the HQUSACE technical proponent for the document will establish a scope of work (SOW) formulating overall policy and requirements to be included and designate an appropriate technical representative to execute the work. Technical representatives will be recognized experts on the designated subject matter and may be located within USACE, other government agencies, or private industry.

(2) All phases of the work will be approved by the HQUSACE technical proponent in accordance with the SOW. Additionally, when appropriate, CEGS will be coordinated with the construction industry during the development process to ensure the specifications reflect state-of-the-art materials, equipment, systems, and practices.

(3) Upon completion of the work, technical representatives will submit CEGS to the HQUSACE technical proponent for final approval.

**c. Notice Program.** This program is funded under the HQUSACE S&C Programs to perform minor maintenance to CEGS between major document updates. This may include incorporation of lessons learned and changes in technology, standards, and referenced publications. The program also ensures that the CEGS are useable with SPECSINTACT software. The U.S. Army Engineering and Support Center, Huntsville, and the U.S. Army Engineer District, Vicksburg, have been designated by the HQUSACE specifications proponents

to execute the program with a Notice Program Coordinator at each office to manage program functions. Changes to CEGS under this program are issued in the form of notices.

**d. Distribution.** CEGS with change notices are distributed electronically through TECHINFO and CCB.

**e. Recommended Changes.** Design agencies are encouraged to submit proposals for new criteria and CEGS that may have USACE-wide application. Proposals for technical or editorial changes to existing criteria and CEGS that are necessary or desirable for general application or to reflect local availability of materials and construction practice are also encouraged. Such proposals may be submitted to HQUSACE electronically using the TECHINFO Recommended Changes Page or by hard copy ENG Form 3078. Recommended changes may also be presented to CSSC members. A current list of members is provided on TECHINFO.

**f. CEGS Points of Contact.** Questions about individual CEGS may be directed to the designated technical proponent for the document. A current list of technical proponents with their phone numbers is provided on TECHINFO.

## **9. Project Specifications.**

**a. General Requirements.** Design agencies will ensure that high-quality and concise specifications are prepared, that the preparation of project specifications is fully coordinated with agency construction and contracting representatives, and that the project specifications comply with industry standards for format and content as established by the CSI Manual of Practice. It is recommended that each design agency designate a specifications engineer to oversee and coordinate the preparation of project specifications to ensure compliance with these requirements. A specifications engineer should have knowledge and experience in developing construction contract documents and project specifications.

**b. Use of Existing Project Specifications.** Where a previous project design is adapted for use on a project, where standard specifications are used for military construction, or where a project design has been completed and held in abeyance for more than six months, the project specifications will be reviewed and revised as necessary.

**c. Use of CEGS.** CEGS provide a set of master guide specifications that should be used for developing project specifications. CEGS must be tailored to fit specific project requirements. The intent and wording of CEGS should be preserved to the extent practicable as they incorporate public laws, federal mandates, DoD and DA policy, industry coordination, and lessons learned. Additional information concerning the use of CEGS in the preparation of project specifications is contained in the document "CEGS General Notes" which is available on TECHINFO and CCB.

**d. SPECSINTACT.** The use of SPECSINTACT is mandatory for production of all project specifications, except for overseas areas. Maximum efficiency and quality are obtained when project specifications are prepared using SPECSINTACT and the latest CEGS edited to suit the specific requirements of projects.

**e. Specifications Development During Project Phases.** Project specifications, when combined with the project drawings, must provide a comprehensive set of construction documents that can be bid fairly and competitively and executed without change, except as necessary to resolve unforeseen conditions or changes made during construction. (See ER 1180-1-6 and ER 415-1-11 for guidance on biddability, constructibility, operability, and environmental review.) Design agencies will identify and resolve unusual design or contract administration problems and assure that project specifications comply with technical policy established by HQUSACE. Close coordination between the specifications engineer and the designers is important throughout all design phases to produce complete and accurate project specifications.

(1) Specifications engineers should assist designers in identifying CEGS sections that are to be used in the project, operating the SPECSINTACT software, and incorporating the designer's input into the project specifications.

(2) Designers are responsible for the design of technical project features and are responsible for the technical content of Divisions 2-16 of the project specifications for those features. Specifications engineers are responsible for the format of all project specification sections and for ensuring that proper and non-contradictory contract language is used throughout. Specifications engineers are also responsible for determining the project-specific information that must be inserted into the non-technical provisions and the Division 1 General Requirements sections.

(3) Designers will prepare technical requirements for which no CEGS exists. When a new specification section must be developed for a particular project, the designer will provide the technical information and ensure that the section contains proper language and is properly formatted in accordance with the the document "Guidance for the Preparation of Corps of Engineers Guide Specifications (CEGS)" which is available on TECHINFO and CCB.

(4) Project Bid Schedules will be prepared in close coordination with Contracting, Counsel, Project Management, Design, Cost Engineering, and Construction. For Civil Works projects, the lump sum and unit-priced items defined for incorporation in the bid schedule must be consistent with the work breakdown structure. Bid schedules will conform to USACE guidance and all aspects of the federal acquisition regulations (FAR Subpart 36.207).

(5) As part of the routine quality assurance/quality control (QA/QC) process, specifications engineers should perform quality checks (e.g., SPECSINTACT reports, visual scan of pages for errors, verification of specification inserts such as the submittal register, etc.) on project specifications prior to advertisement.

(6) Appropriate design staff should make field trips during the construction phase of projects to identify specifications and contract administration problems to be avoided in future project specifications. Corrective action will be implemented to resolve problems identified during all project phases that could have been prevented by improved specifications, e.g., recommend changes in CEGS.

**f. Specifications Prepared by Architect-Engineer (A-E) Firms.** The requirement to use SPECSINTACT for production of project specifications will be included in all procurement of A-E design services. Design agencies will assist the A-E by providing copies of regulations, manuals, engineer technical letters, and other information not available on TECHINFO and CCB. A-E firms under contract with DoD agencies may receive a no-cost subscription to CCB by providing contract documentation to the National Institute of Building Sciences. Design agencies will provide guidance to A-E firms on preparation of Division 1 sections and provide agency-unique information to be incorporated into the Division 1 sections. Previous project specifications may be furnished as samples of the form and content for completed work but should not be used where applicable guide specifications exist.

**g. Construction Documents Format.** Construction contracts shall be prepared in accordance with the HQUSACE format for construction contracts in EFARS Subpart 14.2, Solicitation of Bids. Specification section numbering will follow CSI MasterFormat (latest edition). The format of the sections within the specifications will be based on the CSI SectionFormat as modified under the "CEGS Organization Guidance" attachment to the document "Guidance for the Preparation of Corps of Engineers Guide Specifications (CEGS)".

**h. Reference Publications.** Materials, workmanship, and equipment will be described, where possible, by reference to industry and government standards generally known to the construction community, citing the type, class, or other designation necessary to identify fully the item required. The reference approval date and the dates of any applicable amendment and revisions will be included in the solicitation (FAR Subpart 11.201a). Reference standards should not be used to describe minor, non-critical items (such as incidental fasteners) when any commercially available product of that nature would be adequate. To the maximum extent practicable, references will be to nationally recognized industry and technical society specifications and standards. If industry documents are unavailable or unsuitable, applicable commercial item descriptions (CID) may be referenced. Publications referenced in project specifications need be no later than the editions cited in the current notice for the corresponding CEGS. Publications not readily available to bidders, such as engineer regulations (ER), engineer technical letters (ETL), and technical manuals (TM), should not be referenced but if referenced must be furnished with the solicitation (FAR Subpart 11.201b). In accordance with DoD direction, FED-SPECS, FED-STDS, MIL-SPECS, and MIL-STDS are not to be used in contracts unless exempted by HQUSACE or an approved waiver is provided by the design agency. A list of exempted FED-SPECS, FED-STDS, MIL-SPECS, and MIL-STDS is maintained on TECHINFO.

**i. Submittals.** Submittals, such as shop drawings, test reports, certificates, and samples, will not be required for non-critical items of relatively low value when the cost of making the submittal exceeds the benefit to the project (see ER 415-1-10). Avoidance of such submittal requirements is particularly encouraged for small projects. Submittals are classified as "Government Approved" or "For Information Only." Design agencies must keep submittals requiring government approval to a minimum due to funding limitations. Only those submittals that are critical to safety, construction execution, or system or facility operation should be required for government approval. Critical submittals requiring government approval are extensions of design, critical materials, deviations, O&M manuals, or those involving equipment that must be checked for compatibility with the entire system.



**j. Testing.** Ordinarily, testing is the responsibility of the contractor under the contractor QC provisions of the specifications (see ER 1180-1-6). Requirements in the specifications making testing the contractor's responsibility will not be written in such a way as to void the right of the contracting officer to perform confirmation testing and QA testing or to witness testing by the contractor. Testing by the government should be kept to a minimum and should be done only when necessary to assure the quality of critical construction.

**k. Warranties.** Warranty requirements extending beyond the normal one-year construction warranty period or such other period required by CEGS will be specified only for materials, equipment, or systems for which longer warranties are normally provided in the industry. The increased cost of the extended warranties, and the costs of administering and enforcing such warranties, should be evaluated prior to their specification.

**l. New Materials and Methods.** Designers are encouraged to consider the use of new, unusual, or innovative materials, equipment, systems, or methods in designs when evidence shows that such use is in the best interest of the government in terms of value, lower life-cycle costs, and quality of construction. Manufacturers are to prove the merits of their product by certified laboratory results, evidence of satisfactory installation under conditions similar to those anticipated for the proposed construction, and compliance with appropriate industry standards, if they exist. For a specific project, where different requirements from those in the CEGS are specified, and where the requirements may have application beyond that specific project, design agencies will submit a recommended change (either by ENG Form 3078 or by TECHINFO) to report the new, unusual, or innovative items to HQUSACE. The recommended change report will allow HQUSACE to implement changes to criteria or disseminate useful information through the Engineering Improvement Recommendation System (EIRS) Bulletin.

**m. Brand Names and Proprietary Items.** Specifying items peculiar to one manufacturer (sole source), either by brand name or by peculiar characteristic, is prohibited unless specially justified and approved (FAR, Subpart 11.104). Brand name or equal descriptions are appropriate only as a last resort and should be used with great care and discretion. Where the brand name or equal description is used, the contract provisions will include those salient features of the item or items specified upon which equality can be determined (FAR, Subpart 36.202c).


**n. Contractor's Options.** Optional materials and methods of construction that are acceptable are included in CEGS as a means of increasing competition and reducing project costs. Project specifications should include all contractors' options contained in the CEGS. Additional optional materials and methods may be specified if a study of conditions affecting a particular project shows that other options are consistent with good architectural and engineering practice, are economically justifiable, and provide the best value to the government. Where a contractor's option is specified which is not part of the CEGS, and where the specified contractor's option may have application beyond that specific project, the design agencies will submit a recommended change (either by ENG Form 3078 or by TECHINFO) to report the optional materials and methods to HQUSACE.

**10. Training.** Design agency staff involved in preparation of specifications should attend the Proponent-Sponsored Engineer Corps Training (PROSPECT) Course "Specifications for

Construction Contracts.” Training should also be provided in bidding procedures and the preparation of the non-technical provisions of contract documents, personal computer software, SPECSINTACT, and, if SPECSINTACT is used on a network, in network operation and software. Specifications staff should be encouraged to become certified under the CSI Certified Construction Specifier Program.

**FOR THE COMMANDER:**

1 Appendix  
APP A - References



ALBERT J. GENETTI, JR.  
Major General, USA  
Chief of Staff

## **APPENDIX A**

### **REFERENCES**

#### **1. Required Publications.**

- a. Federal Acquisition Regulation (FAR), Part 11.
- b. Federal Acquisition Regulation (FAR), Part 36.
- c. ER 15-1-41, Corps of Engineers Specifications Steering Committee (CSSC).
- d. ER 415-1-10. Contractor Submittal Procedures.
- e. ER 415-1-11, Biddability, Constructibility, and Operability.
- f. ER 1180-1-6, Construction Quality Management.
- g. Engineering FAR Supplement (EFARS) Subpart 14.2, Solicitation of Bids.
- h. Manual of Practice (MOP), Construction Specifications Institute (CSI), 601 Madison Street, Alexandria, VA 22314.

#### **2. Related Publications.**

- a. AR 5-1, Army Management Philosophy.
- b. ER 690-1-414, Proponent-Sponsored Engineering Corps Training (PROSPECT).
- c. ER 1110-1-12, Quality Management.
- d. ER 1110-2-1150, Engineering and Design for Civil Works Projects.
- e. ER 1110-2-1200, Plans and Specifications for Civil Works Projects.
- f. ER 1110-2-1302, Civil Works Cost Engineering.
- g. ER 1110-3-1300, Military Programs Cost Engineering
- h. ER 1110-345-100, Design Policy for Military Construction.
- i. ER 1110-345-700, Design Analysis, Drawings, and Specifications.